

What is claimed is:

1. A method for automating contract negotiation between a plurality of parties, each having at least one computing system coupled to a communications network and one or more applications running thereon, the method comprising the steps of:

- 5        using a negotiation meta contract to specify a negotiation protocol for negotiating parties to follow;  
         communicating a request to negotiate; and  
         conducting an automatic negotiation, according to the negotiation meta contract, between the one or more applications of each of the plurality of parties.

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2. The method of claim 1, wherein the meta contract is formed from information provided by at least one party in at least one electronic document, prior to the negotiation.

3. The method of claim 1, further comprising the step of performing at least one sub  
15 negotiation.

4. The method of claim 1, further comprising the step of forming an electronic commerce contract.

20 5. The method of claim 1, wherein one of the parties is a service provider having a service application on a server computer system and another of the parties is a service requester having a requester application on a client computer system.

6. The method of claim 1, further comprising the step of providing for a suspend-negotiation  
25 action to take place to enable human intervention during the negotiation.

7. The method of claim 1, wherein each party maintains the contract state of the overall negotiation.

8. A method for conducting a negotiation between a plurality of parties, each of said parties having a computer system coupled to a communication network and one or more applications running thereon, the method comprising the steps of:

providing a specification of machine-executable rules of negotiation for the parties for  
5 generating at least one contract; and

providing a starting state for a contract, wherein the starting state is selectable from one of: a previous contract, a publicly defined template, and a template defined prior to the negotiation by one of the parties.

10 9. The method of claim 8, wherein the starting state is selectable from a set of profiles published in a repository by at least one of the parties prior to the negotiation.

10. The method of claim 8, wherein the publicly defined template is Open Buying on the  
15 Internet.

11. The method of claim 9, wherein the repository is a service broker public registry.

12. A method for conducting an automatic negotiation between a plurality of parties, each of  
20 said parties having a computer system coupled to a communication network and one or more applications running thereon, the method comprising the steps of:

creating a template prior to the negotiation, wherein the template contains business logic for performing a negotiation electronically;

registering the business logic, prior to the negotiation, with a server accessible by one or  
25 more parties; and

implementing the business logic in a negotiation conducted automatically between computer systems over the communication network.

13. The method of claim 12, wherein the template is registered with the server prior to  
30 conducting a negotiation automatically between computer systems over the computer network.

14. The method of claim 12, wherein the server maintains negotiation logic for processing a negotiation request that is customized to the contract template.

5 15. A method for conducting a negotiation between a plurality of parties, each of said parties having a server coupled to a communication network and one or more applications running thereon, comprising the steps of:

providing a specification of machine-executable rules of negotiation for the parties for generating at least one contract;

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enabling an automatic negotiation to take place between the servers in accordance with the specification of machine-executable rules; and

forming a meta contract for controlling a negotiation process.

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16. The method of claim 15, wherein the meta contract defines at least one of: general information pertaining to the formation of a contract; roles and participants in the negotiation; a delivery channel; a transport protocol; a document exchange protocol; a negotiation protocol; sequencing rules; and policy constraints.

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17. The method of claim 16, wherein the negotiation protocol specifies actions to be performed in a negotiation, including at least one of: making an offer; rejecting an offer; making a counter offer; and accepting an offer or counter offer.

25 18. The method of claim 17, wherein the negotiation protocol provides a suspension request to be sent to at least one of the servers for the suspension of a negotiation to allow human intervention

19. The method of claim 17, wherein the negotiation protocol provides for the resumption of  
30 an automatic negotiation upon termination of human intervention.

20. The method of claim 18, wherein the suspension request specifies a suspension time interval in which human intervention is enabled.

5 21. The method of claim 20, wherein the server that receives the suspension request waits until the suspension time interval expires before it takes further action.

22. The method of claim 16, wherein the negotiation protocol specifies actions to be performed in a negotiation, including at least one of: starting a sub negotiation; committing a sub  
10 negotiation; accepting a sub negotiation, and aborting a sub negotiation.

23. The method of claim 15, wherein at least one of the parties further has a client application for performing at least one action of the meta contract by a human operator.

15 24. The method of claim 23, wherein the client application has a graphical user interface.

25. The method of claim 15, wherein the meta contract contains a complete set of rules for determining the validity of meta contract actions invoked during a negotiation.

20 26. The method of claim 15, wherein the meta contract invokes at least one business specific  
method for determining the validity of a meta contract operation.

27. The method of claim 15, wherein the meta contract invokes at least one business specific method for determining the response to a meta contract operation.

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28. A method for conducting a negotiation between a plurality of parties, each of said parties having a computer system coupled to a communication network and one or more applications running thereon, comprising the steps of:

providing a specification of machine-executable rules of negotiation for the parties for  
30 generating at least one contract;

forming a meta contract that specifies a negotiation protocol; and

enabling an automatic negotiation to take place between the parties in accordance with the  
5 specification of machine-executable rules;

wherein at least one of the negotiating parties is an intermediary for facilitating the automatic negotiation.

10 29. The method of claim 28, wherein at least one of the parties delegates at least part of the negotiation process to a broker.

30. A computer program product in a computer readable medium in a first computer system for conducting a negotiation between a plurality of parties, comprising:

15 first instructions for providing a specification of machine-executable rules of negotiation for the parties for generating at least one contract;  
second instructions for enabling an automatic negotiation to take place between a party located at the first computer system and a party located at a second computer system in accordance with the specification of machine-executable rules; and  
20 third instructions for negotiating a contract automatically between the parties.

31. A method of conducting a negotiation over a data communication network between a service provider and a service requester, comprising the steps of:

25 providing, by the service provider, a negotiation meta-contract which defines a negotiation protocol;

receiving, at the service provider, a request to negotiate from the service requester;

responsive to the request to negotiate, automatically negotiating with the service requester  
30 by the service provider in accordance with the negotiation protocol.

32. The method of claim 31, wherein the step of automatically negotiating with the service requester by the service provider comprises one of: sending an offer, sending an acceptance, sending a counter offer, sending a rejection, aborting the negotiation, suspending the negotiation, and committing the negotiation.

33. A method of conducting business over the Internet, wherein parties negotiate contractual terms between two data communication network components, the method comprising the steps of:

providing a specification of machine-executable rules of negotiation for generating at least one contract;

forming a meta contract that specifies a negotiation protocol; and

originating a negotiation at a first party in accordance with the rules of negotiation.

34. An article of manufacture for automating contract negotiation between a plurality of parties, comprising a machine readable medium containing one or more programs which when executed implement the steps of:

communicating, in a preliminary step, a negotiation protocol for negotiating parties to follow;

communicating a request to negotiate; and

conducting an automatic negotiation, according to the negotiation protocol, between the one or more applications of each of the plurality of parties.